

REMARKS

Claims 1-51 remain pending after response.

Claim Amendments

By this amendment, claim 1 is amended to define the material of which the third intermediate layer is comprised. Support for this amendment resides at page 7, lines 12-21; and page 8, lines 7-11. New claims 46-51 are added for the sake of completeness. New claim 46 corresponds to allowed dependent claim 11. New claim 47 corresponds to allowed dependent claim 39. New claims 48-51 correspond to dependent claims 40-43. No new matter is added by this amendment.

Interview with Examiner

Applicants thank the Examiner for the courtesy extended toward their representative during the interview of December 5, 2007. As a result of the interview, it was agreed that applicants would amend claim 1 to more clearly define the third intermediate layer. It was further agreed that such an amendment would appear to patentably distinguish over the cited prior art. For the reasons indicated in detail below, all pending claims are accordingly believed to be directed to allowable subject matter.

Substitute IDS Transmittal Form

During the interview, the Examiner noted that applicants had inadvertently failed to check a box which supported their claim that no fee was required for the submission of the prior art identified in the IDS transmittal form of October 11, 2007. During the interview, it was confirmed by both the Examiner and applicants' representative that the box should have been checked which confirmed that the prior art was submitted within three months of becoming known to applicants.

Applicants accordingly submit herewith a substitute IDS transmittal form which satisfies this previous inadvertent omission. Applicants thank the Examiner for this careful review of the prior submission.

Allowable Subject Matter

Applicants thank the Examiner for the indication of allowable subject matter of claims 3-5, 8, 9, 11, 14-24 and 27-45. As a result of the above amendments, and the following discussion, it is believed that all pending claims are now allowable, and should be so indicated.

Rejection under 35 USC 102(b)

Claims 1, 2, 10, 25 and 26 stand rejected under 35 USC 102(b) as being anticipated by Wilkinson et al '726. This rejection is respectfully traversed to the extent deemed to apply to the claims as amended.

By way of review, the Examiner's rejection of the claims is on the basis that the reference discloses a *fuel cell gas separator* having the defined structure – however, the reference fails to teach or suggest the recited fuel cell gas separator.

As explained in the second paragraph of the application, on page 1, the purpose of a gas separator in a fuel cell assembly is to keep the oxygen containing gas supplied to the cathode side of one fuel cell separate from the fuel gas supply to the anode side of an adjacent fuel cell. This is vitally important in preventing the electrodes of the fuel cells from being poisoned, for example, for preventing the nickel anodes of the fuel cells in a solid oxide fuel cell assembly from being oxidized by the oxygen containing gas on the cathode side of the fuel cells.

This separation of the fuel and oxidant is required for every type of fuel cell, whether the low temperature polymer electrolyte membrane fuel cell of the reference, or the high temperature solid oxide fuel cells of the described embodiments of the application. The Examiner has relied on the embodiment of Figures 4a and 4b of the reference in support of the rejection.

In paragraph 2 of the Office Action, the Examiner argues implicitly that the fuel cell gas separator of the reference is the layered structure 412. This is not correct. As explained in column 8, lines 21 to 30 of the reference, the layered structure 412 is the fuel cell or membrane electrode assembly which comprises a polymer ion exchange membrane 414 sandwiched between anode and cathode fluid distribution layers 418 and 419 having electrode catalyst-containing layers 420 and 421. Effectively, the layers 420 and 421 are the anode and cathode. The fuel cell or membrane electrode assembly 412 is separated from adjacent fuel cells or membrane electrode assemblies (not shown) by gas separators 422 and 424.

By way of example, the gas separator 422 separates the fuel gas in the channels 423 in the anode fluid distribution layer 418 of the fuel cell or membrane electrode assembly 412 from the oxidant gas in the channels 425 of the cathode fluid distribution layer 419 of the fuel cell or membrane electrode assembly to the left of the assembly 412 in Figure 4a.

In order for the fuel cell reactions described at columns 1 and 2 of the reference to occur, the fuel gas in channels 423 and oxidant gas in channels 425 must reach the respective electrode catalyst layers 420 and 421. The material 450 of the fluid distribution layers 418 and 419 is described at column 8, lines 35 to 39 as being substantially fluid impermeable. However, as described at column 8, lines 39 to 48, the material 450 has perforations 452 through it in each fluid distribution layer 418 and 419, from the gas flow channels to the electrode catalyst layer, which are filled with permeable electrically conductive filler 454.

While the ion exchange membrane 414 in the fuel cell or membrane electrode assembly 412 does separate the fuel gas of the anode fluid distribution layer 418 from the oxidant gas of the cathode fluid distribution layer 419 (see column 1, line 39 to 41), those skilled in the art would immediately recognize that the layered structure 412 would be known *not* as a fuel cell gas separator, but as a fuel cell or membrane electrode assembly. The skilled person would equally quickly recognize the plates 422 and 424 as being the gas separators since the purpose of a fuel cell gas separator, as described above, is to separate the fuel gas applied to the anode side of one fuel cell from the oxidant gas applied to the cathode side of an adjacent fuel cell and vice versa.

For the above reasons, applicants believe the rejection to be without basis.

However, in an attempt to expedite prosecution on the merits, and as discussed during the interview, applicants amend claim 1 to more clearly describe the material of which the third intermediate layer is comprised. As discussed during the interview, the reference focuses exclusively on the use of a polymer ion exchange membrane. Claim 1 now provides for the use of materials for the intermediate third layer which distinguish from the use of a polymer ion exchange membrane. Accordingly, as recognized by the Examiner during the interview, such an amendment to claim 1 clearly negates the anticipation rejection of the Examiner.

The rejection is accordingly without basis and should be withdrawn.

Rejection under 35 USC 103(a)

Claims 6, 7, 12 and 13 stand rejected under 35 USC 103(a) as being unpatentable over Wilkinson et al. This rejection is respectfully traversed to the extent deemed to apply to the claims as amended.

The deficiencies of the cited reference are discussed above, particularly in light of the amendments made to claim 1.

In view thereof, as well as the above amendments to claim 1, the rejection is without basis, and should be withdrawn.


The application is accordingly believed to be in condition for allowance, and an early indication of same earnestly is solicited.

Application No. 10/501,153
Reply dated December 10, 2007
Reply to Office Action of September 10, 2007

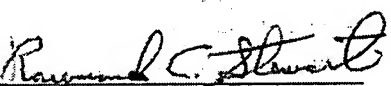
Docket No.: 0446-0165PUS1

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Raymond C. Stewart Reg. No. 21,066 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.


Dated: December 10, 2007

Respectfully submitted,

By 
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Attachment: Substitute IDS Transmittal Form